

CLAIMS:

1. Focus control apparatus for controlling objective means (2) to focus a radiation beam onto a first spatial level of a record carrier (1), said apparatus comprising:
 - (a) a focus control loop having a detection means (6) for detecting a signal obtained from a reflection of said radiation beam at said record carrier (1), and an actuator means (11) for adjusting the position of said objective means (2) in response to said detected signal; and
 - (b) focus control means (7) for controlling said actuator means (11) to move said objective means (2) towards said record carrier (1), locking the focus to a reflection signal stemming from a second spatial level of said record carrier (1), opening said focus control loop, and controlling said actuator means (11) to move said objective means (2) by a predetermined amount related to a distance between said first and second spatial levels.
2. Apparatus according to claim 1, wherein said first spatial level corresponds to a surface of said record carrier (1) and said second spatial level corresponds to a data layer of said record carrier (1).
3. Apparatus according to claim 1, wherein said first spatial level corresponds to a data layer of said record carrier (1) and said second spatial level corresponds to an other data layer of said record carrier (1).
4. Apparatus according to claim 1, wherein multiple spatial levels exist in which any of said spatial levels can be selected as said first spatial level and any other spatial level can be selected as said second spatial level.
- 25 5. Apparatus according to claim 1, wherein said first spatial level corresponds to a first negative-slope zero crossing of a focus error signal detected by said detection means (6) and said second spatial level corresponds to second negative slope zero crossing of said focus error signal.

6. Apparatus according to any one of the preceding claims, wherein said move of said objective means by said predetermined amount is achieved by a jump operation initiated by said focus control means (7).

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7. Apparatus according to claim 4, wherein said jump operation is initiated by said focus control means (7) by applying a predetermined jump pulse to said actuator means (11).

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8. An apparatus according to any one of the preceding claims, wherein said predetermined amount corresponds to an effective optical thickness between said first and second spatial levels.

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9. An apparatus according to any one of the preceding claims, wherein said focus control means (7) is configured to close said focus control loop again after said move of said objective means (2) by said predetermined amount.

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10. An apparatus according to any one of the preceding claims, wherein said focus control means (7) is configured to control said actuator means (11) to reduce the relative velocity between said objective means (2) and said record carrier (1) to zero, when said locking to said second spatial level has been detected.

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11. A disc player for at least one of reading from or writing to a record carrier (1), said disc player comprising a focus control apparatus as claimed in any one of claims 1 to 8.

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A disc player according to claim 9, wherein said record carrier is a magneto-optical domain-expansion disc (1).

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30 A method of controlling focus of a radiation beam onto a first spatial level of a record carrier (1), said method comprising the steps of:

(a) locking a focus control loop onto a reflection signal obtained from a second spatial level located at a predetermined distance from said first spatial level;

- (b) opening said focus control loop and moving an objective means (2) towards said second spatial level by a predetermined amount related to said predetermined distance; and
- (c) closing said focus control loop again after said moving step.